

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of inserting sync patterns in modulated data, comprising:

- (a) receiving modulated channel data;
- (b) identifying a frame sequence of each frame-constituting channel data in a sector; and
- (c) inserting a sync pattern in the channel data, a length of the sync pattern varying based on the identified frame sequence,

wherein said step (c) inserts a first sync pattern if the identified frame sequence is first in a sector, the first sync pattern being longer in bit length than a second sync pattern which is inserted before or behind non-first frame-constituting channel data.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein the first sync pattern consists of  $d$  zeros, one,  $(k+3)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

4. (Previously Presented) The method of claim 1, wherein the second sync pattern consists of  $d$  zeros, one,  $(k+1)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

5. (Previously Presented) The method of claim 1, wherein the first sync pattern is longer than the second sync pattern by 2 bits.

6. (Original) The method of claim 1, wherein the sync pattern has 0's run longer than  $k$  when  $(d,k)$  constraints are given.

7. (Previously Presented) A recording device comprising:  
modulated data in sectors constituting a data block, the modulated data containing sync patterns which are added to every frame-constituting data unit, a length of the sync pattern varying based on a frame sequence of a corresponding frame-constituting data unit in a sector,  
wherein a first sync pattern has been added if the frame sequence is first in a sector, the first sync pattern is longer in bit length than a second sync pattern which has been added before or behind non-first frame-constituting data unit.

8. (Canceled)

9. (Previously Presented) The recording device of claim 7, wherein the first sync pattern consists of  $d$  zeros, one,  $(k+3)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

10. (Previously Presented) The recording device of claim 7, wherein the second sync pattern consists of  $d$  zeros, one,  $(k+1)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

11. (Previously Presented) The recording device of claim 7, wherein the first sync pattern is longer than the second sync pattern by 2 bits.

12. (Original) The recording device of claim 7, wherein the sync pattern has 0's run longer than  $k$  when  $(d,k)$  constraints are given.

13. (Currently Amended) A method of inserting sync patterns in modulated data, comprising:

(a) receiving modulated channel data; and

(b) inserting a sync pattern in the channel data at intervals,

wherein a total number of bits inserted for the sync pattern is varied based on whether the sync pattern represents a sector sync pattern or a frame sync pattern,

wherein the total number of bits inserted for the sector sync pattern is longer than the total number of bits inserted for the frame sync pattern, and

wherein the total number of bits inserted for the sector sync pattern is longer than the total number of bits inserted for the frame sync pattern by 2 bits.

14-15. (Canceled).

16. (Original) The method of claim 13, wherein the sector sync pattern consists of  $d$  zeros, one,  $(k+3)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

17. (Original) The method of claim 13, wherein the frame sync pattern consists of  $d$  zeros, one,  $(k+1)$  zeros, one, and  $d$  zeros when  $(d,k)$  constraints are given.

18. (Original) The method of claim 13, wherein the sector sync pattern and the frame sync pattern have 0's run longer than  $k$ , respectively when  $(d,k)$  constraints are given.

19. (Previously Presented) The method of claim 13, wherein the step (b) inserts the frame sync pattern before or behind non-first frame-constituting channel data.